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1.-**38**. (canceled)

39. A method for quantifying a cancer biomarker in circulating nucleic acid molecules from a patient, the method comprising:

(a) providing a plurality of circulating nucleic acid molecules obtained from a patient sample;

(b) ligating the circulating nucleic acid molecules to cypher polynucleotides to form double-stranded cypher-target nucleic acid complexes, wherein:

(i) the cypher polynucleotides comprise bar codes selected from a plurality of distinct bar code sequences;

(ii) at least two of the bar codes are identical in sequence and are ligated to different circulating nucleic acid molecules, thereby non-uniquely tagging the different circulating nucleic acid molecules; and

(iii) a bar code alone or in combination with an end of a circulating nucleic acid molecule uniquely identifies a cypher-target nucleic acid complex;

(c) amplifying the cypher-target nucleic acid complexes to produce a plurality of cypher-target amplification products from first strands and complementary second strands of the cypher-target nucleic acid complexes;

(d) sequencing the cypher-target amplification products to produce a plurality of first-strand sequencing reads and